

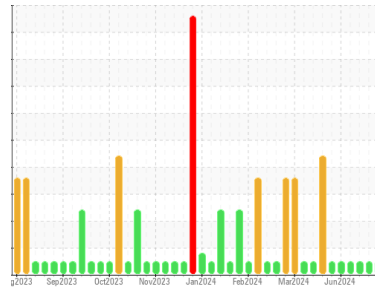


# OIL ANALYSIS REPORT



Machine Id  
**LIDM04BE (S/N GZJ00279)**  
 Component  
**Biogas Engine**  
 Fluid  
**CHEVRON HDAX 9500 GAS ENGINE OIL 40 (540 LTR)**

Sample Rating Trend



**NORMAL**



## DIAGNOSIS

### Recommendation

Échantillonner de nouveau l'équipement au prochain intervalle de vidange afin d'en surveiller la condition.

### Wear

Les taux d'usure de tous les composants sont normaux.

### Contamination

Il n'y a aucun indice de contamination dans l'huile.

### Fluid Condition

Le résultat pour le BN indique que la réserve d'alcalinité est acceptable pour l'huile. Le AN est acceptable pour ce fluide. L'état de l'huile permet d'en prolonger l'utilisation.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>WC0904262</b>   | WC0954717   | WC0954711   |
| Sample Date   | Client Info |             | <b>02 Jul 2024</b> | 25 Jun 2024 | 17 Jun 2024 |
| Machine Age   | hrs         | Client Info | <b>51301</b>       | 51139       | 51038       |
| Oil Age       | hrs         | Client Info | <b>642</b>         | 480         | 379         |
| Oil Changed   | Client Info |             | <b>Not Chngd</b>   | Not Chngd   | Not Chngd   |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >4.0       | <b>&lt;1.0</b> | <1.0     | <1.0     |
| Water  | WC Method |            | <b>NEG</b>     | NEG      | NEG      |
| Glycol | WC Method |            | <b>NEG</b>     | NEG      | NEG      |

## WEAR METALS

|           | method | limit/base        | current      | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Iron      | ppm    | ASTM D5185(m) >14 | <b>3</b>     | 6        | 4        |
| Chromium  | ppm    | ASTM D5185(m) >3  | <b>0</b>     | <1       | 0        |
| Nickel    | ppm    | ASTM D5185(m)     | <b>&lt;1</b> | <1       | <1       |
| Titanium  | ppm    | ASTM D5185(m)     | <b>0</b>     | 0        | 0        |
| Silver    | ppm    | ASTM D5185(m)     | <b>0</b>     | 0        | 0        |
| Aluminum  | ppm    | ASTM D5185(m) >5  | <b>3</b>     | 3        | 3        |
| Lead      | ppm    | ASTM D5185(m) >8  | <b>0</b>     | 0        | 0        |
| Copper    | ppm    | ASTM D5185(m) >5  | <b>&lt;1</b> | 1        | 1        |
| Tin       | ppm    | ASTM D5185(m) >3  | <b>&lt;1</b> | <1       | <1       |
| Antimony  | ppm    | ASTM D5185(m)     | <b>0</b>     | 1        | <1       |
| Vanadium  | ppm    | ASTM D5185(m)     | <b>0</b>     | 0        | 0        |
| Beryllium | ppm    | ASTM D5185(m)     | <b>0</b>     | 0        | 0        |
| Cadmium   | ppm    | ASTM D5185(m)     | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base    | current      | history1 | history2 |
|------------|--------|---------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185(m) | <b>5</b>     | 6        | 6        |
| Barium     | ppm    | ASTM D5185(m) | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185(m) | <b>5</b>     | 5        | 5        |
| Manganese  | ppm    | ASTM D5185(m) | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185(m) | <b>10</b>    | 9        | 9        |
| Calcium    | ppm    | ASTM D5185(m) | <b>1746</b>  | 1690     | 1696     |
| Phosphorus | ppm    | ASTM D5185(m) | <b>236</b>   | 234      | 241      |
| Zinc       | ppm    | ASTM D5185(m) | <b>295</b>   | 289      | 294      |
| Sulfur     | ppm    | ASTM D5185(m) | <b>1594</b>  | 2270     | 1939     |
| Lithium    | ppm    | ASTM D5185(m) | <b>&lt;1</b> | <1       | <1       |

## CONTAMINANTS

|           | method | limit/base         | current   | history1 | history2 |
|-----------|--------|--------------------|-----------|----------|----------|
| Silicon   | ppm    | ASTM D5185(m) >180 | <b>32</b> | 53       | 38       |
| Sodium    | ppm    | ASTM D5185(m) >20  | <b>1</b>  | <1       | <1       |
| Potassium | ppm    | ASTM D5185(m) >20  | <b>5</b>  | 3        | 2        |

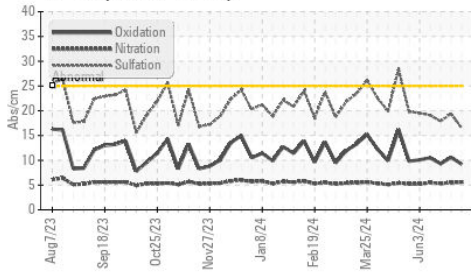
## INFRA-RED

|           | method   | limit/base  | current     | history1 | history2 |
|-----------|----------|-------------|-------------|----------|----------|
| Soot %    | %        | ASTM D7844* | <b>0</b>    | 0        | 0        |
| Nitration | Abs/cm   | ASTM D7624* | <b>5.6</b>  | 5.5      | 5.3      |
| Sulfation | Abs./1mm | ASTM D7415* | <b>16.5</b> | 19.4     | 17.9     |

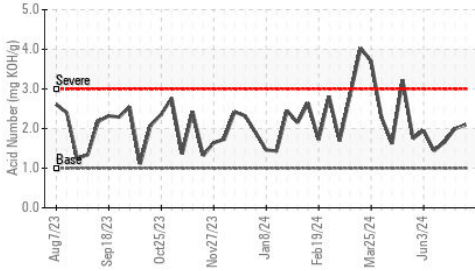


# OIL ANALYSIS REPORT

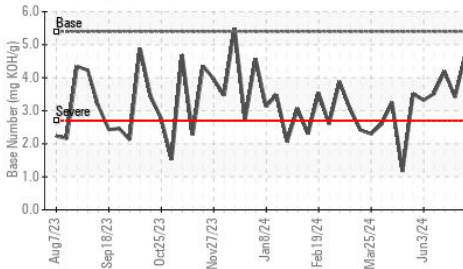
FT-IR (Direct Trend)



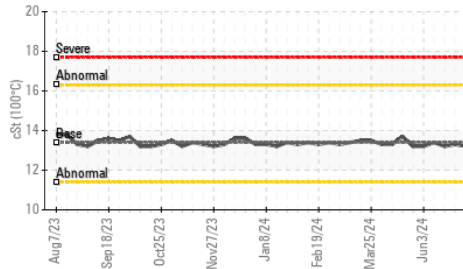
Acid Number



Base Number



Viscosity @ 100°C



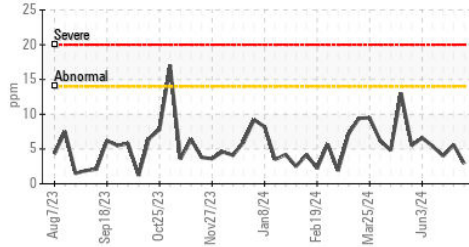
| FLUID DEGRADATION | method     | limit/base  | current     | history1 | history2 |
|-------------------|------------|-------------|-------------|----------|----------|
| Oxidation         | Abs/.1mm   | ASTM D7414* | <b>9.2</b>  | 10.6     | 9.3      |
| Acid Number (AN)  | mg KOH/g   | ASTM D974*  | <b>2.09</b> | 2.00     | 1.66     |
| Base Number (BN)  | mg KOH/g   | ASTM D2896* | <b>4.72</b> | 3.41     | 4.19     |
| i-pH              | Scale 0-14 | ASTM D7946* | <b>6.21</b> | 5.01     | 6.19     |

| VISUAL           | method | limit/base | current    | history1 | history2 |
|------------------|--------|------------|------------|----------|----------|
| Emulsified Water | scalar | Visual*    | <b>NEG</b> | NEG      | NEG      |
| Free Water       | scalar | Visual*    | <b>NEG</b> | NEG      | NEG      |

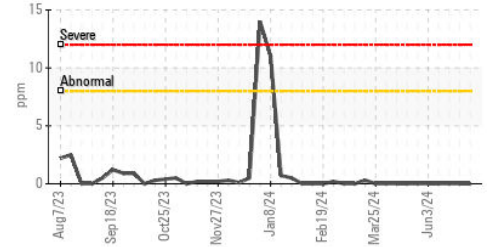
| FLUID PROPERTIES | method | limit/base    | current     | history1 | history2 |
|------------------|--------|---------------|-------------|----------|----------|
| Visc @ 100°C     | cSt    | ASTM D7279(m) | <b>13.2</b> | 13.3     | 13.2     |

## GRAPHS

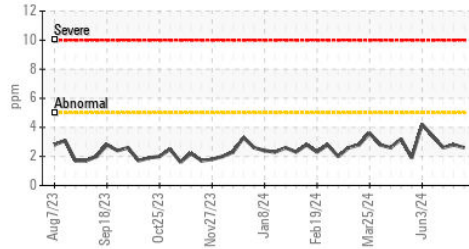
Iron (ppm)



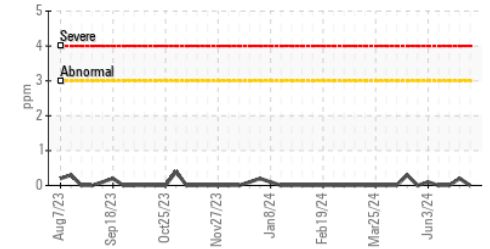
Lead (ppm)



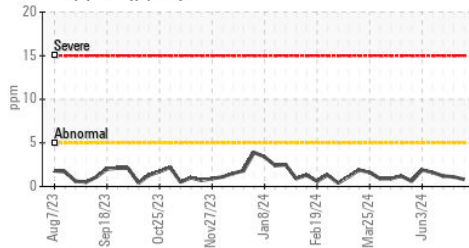
Aluminum (ppm)



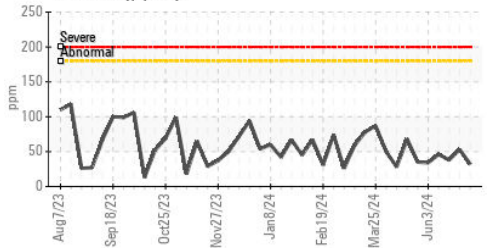
Chromium (ppm)



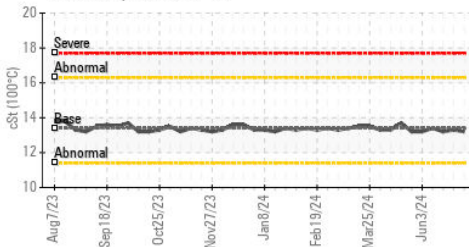
Copper (ppm)



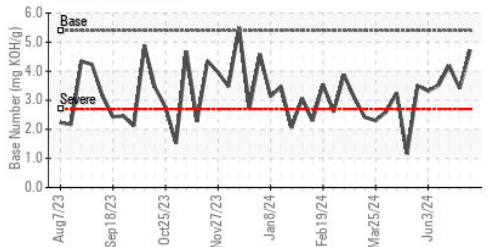
Silicon (ppm)



Viscosity @ 100°C



Base Number



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0904262 **Received** : 03 Jul 2024  
**Lab Number** : **02645242** **Tested** : 09 Jul 2024  
**Unique Number** : 5802781 **Diagnosed** : 09 Jul 2024 - Kevin Marson  
**Test Package** : MOB 2 ( Additional Tests: i-pH, TAN Auto, TAN Man )

**EDL NA Recips-Lydia**  
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 CA J8H 2C5  
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 T: (450)526-4001  
 F:

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.